AMENDMENTS TO THE SPECIFICATION

Please replace the ABSTRACT with the following rewritten ABSTRACT:

-- ~~The invention provides a method of diagnosing a system, a method of operating an aggregating system for system diagnosis and an aggregating system for system diagnosis, which are suitable for evaluating effectiveness of system improvement.~~

A total receiving steam amount Qi and a total necessary steam amount Qo are grasped. Further, a total amount of steam loss which can be solved by a predetermined system improvement is grasped as a total improvable steam loss amount. Then, based on these respective grasped total amounts, a ration of the total improvable steam loss mount relative to a total unknown steam amount Qx which is a difference between the total receiving steam amount Qi and the total necessary steam amount Qx is obtained as an improvable unknown steam ratio Kts. Or, the unknown steam ratio Kt and an improved unknown steam ratio Kxx or the unknown steam ratio Kx and an apparent improved unknown steam ratio Kxx' is/are obtained. --

Please replace the paragraph beginning at page 1, line 15, with the following rewritten paragraph:

-- Conventionally, there is a known [[a]] method of diagnosing a system using steam as follows. First, operational conditions of a plurality of steam traps in a client's evaluation target system to be diagnosed are diagnosed by a trap diagnotor. Next, based on the result of this diagnosis, the method calculates a trap-passed steam loss for all the steam traps in the diagnosis evaluation target system (i.e. the aggregated loss of the trap-passed steam losses of all of the steam traps in the evaluation target system). Then, the method presents before the client an economic advantage obtained through reduction in the trap-passed steam loss by replacing all the steam traps by new steam traps (see Patent Document 1). --

Please replace the paragraph beginning at page 3, line 18, with the following rewritten paragraph:

-- That is to say, in a steam piping, in general, there exists steam loss due to various causes. In the system diagnosing method according to this first characterizing feature, the total unknown steam amount which is a difference between the total receiving steam amount and the total necessary steam amount means a total amount of steam loss existing due to various causes in an evaluation target steam piping. --

Please replace the paragraph beginning at page 5, line 9, with the following rewritten paragraph:

-- Moreover, in implementing the system diagnosing method according to the first characterizing feature, in case the flash steam generated from high-pressure steam drain is to be reused in the low-pressure system, it is preferred that the total receiving steam amount be grasped with the amount of the reused flash steam being included in duplication in the amount of steam prior to the draining. --

Please replace the paragraph beginning at page 5, line 29, with the following rewritten paragraph:

-- That is, according to the system diagnosing method of this second characterizing feature, when it is desired to reduce the steam loss in the evaluation target steam piping by replacement (or repair) of the steam traps, it is possible to appropriately and readily <u>evaluate</u> the effectiveness of system improvement by such trap replacement (or repair). --

Please replace the paragraph beginning at page 6, line 10, with the following rewritten paragraph:

-- Therefore, if this total trap-passed steam loss amount is used as the total improvable steam loss amount to obtain the improvable steam ratio, or the unknown steam ratio and the improved unknown steam ration, or the unknown steam ratio and the apparent improved unknown steam ratio, the obtained values indicate the ratio of reduction in the total unknown steam amount which can be realized by the replacement (or repair) of the evaluation target steam traps. --

Please replace the paragraph beginning at page 7, line 17, with the following rewritten paragraph:

-- That is, according to the system diagnosing method of this third characterizing feature, when it is desired to reduce the steam loss in the evaluation target steam piping by replacement (or repair) of the steam traps and repair of the steam leaking portions in the respective piping portions, it is possible to appropriately and readily <u>evaluate</u> the effectiveness of system improvement by such trap replacement (or repair) and the repair of the steam leaking portions. --

Please replace the paragraph beginning at page 8, line 3, with the following rewritten paragraph:

-- Therefore, if this sum total steam loss amount is used as the total improvable steam loss amount to obtain the improvable steam ratio, or the unknown steam ratio and the improved unknown steam ration, or the unknown steam ratio and the apparent improved unknown steam ratio, the obtained values indicate the ratio of reduction in the total unknown steam amount which can be realized by the two factors, i.e. the replacement (or repair) of the evaluation target steam traps and the repair of the steam leaking portions in this piping. --

Please replace the paragraph beginning at page 8, line 23, with the following rewritten paragraph:

-- In implementing the system diagnosing method according to the second or third characterizing feature, the trap-passed steam loss refers to loss of steam undesirably discharged to the outside as a result of its passage through the steam trap due mainly to the operational defect of the steam trap. Preferably, a trap-passed steam loss amount difference due to a type difference between the existing st[[r]]eam trap and a steam trap recommended for its replacement should also be treated as a trap-passed steam loss. --

Please replace the paragraph beginning at page 8, line 30, with the following rewritten paragraph:

-- In implementing the system diagnosing method according to the second or third characterizing feature, the calculation of the total trap-passed steam loss amount can employ either one of the two methods as follow. Namely, the trap operation diagnosis can be performed on all the evaluation target steam traps mounted in the evaluation target piping and based on the result of this diagnosis, the total trap-passed steam loss amount may be obtained. Alternatively, the trap operation diagnosis can be performed only on[[e]] some steam traps selected from the evaluation target steam traps mounted in the evaluation target steam piping and based on the result of this diagnosis and number ratio information relating to the some steam traps and the all the evaluation target steam traps, the total trap-passed steam loss amount may be obtained deductively. --

Please replace the paragraph beginning at page 9, line 12, with the following rewritten paragraph:

-- In implementing the system diagnosing method according to the third characterizing feature, the calculation of the total steam leakage loss amount can employ either one of the two methods as follow. Namely, the steam leakage diagnosis can be performed on the entire evaluation target steam piping and based on the result of this diagnosis, the total steam leakage loss amount may be obtained. Alternatively, the steam leakage diagnosis can be performed only on[[e]] some portions selected from the evaluation target steam piping and based on the result of this diagnosis and evaluation amount ratio information (e.g. information concerning piping amount ratio, mounted valve number ratio, etc.), the steam leakage loss amount may be obtained deductively. --

Please replace the paragraph beginning at page 9, line 23, with the following rewritten paragraph:

-- And, in implementing the system diagnosing method relating to the third characterizing feature, preferably, the steam leakage diagnosis for diagnosing leakage of steam from respective portions of an evaluation target steam piping should be performed for each and every steam leakage from a joint or valve incorporated in middle of the piping or steam leakage from the pipe body per se as well as for steam leakage from a device to which the pi[[n]]ping is connected. However, in certain cases, the diagnosis can be performed for only one of them (e.g. steam leakage from the pipe). --

Please replace the paragraph beginning at page 18, line 24, with the following rewritten paragraph:

-- Further, according to the aggregating system of this seventh characterizing feature, if the calculations of the various values are automatically effected by the calculating means, it is possible to reduce the burden of calculating operations after the diagnosis. Further, regarding the input of the diagnosis too, the diagnosis result can be easily inputted to the inputting means through input from the trap diagnotor, so that the trouble of the inputting operation can also be alleviated. Moreover, through these automization of calculations and improved efficiency of input, after the performance of the trap operation diagnosis, it is also possible to effectively reduce the time period needed after the performance of the trap

operation diagnosis until the consideration of the effectiveness of system improvement using the calculation results. --

Please replace the paragraph beginning at page 21, line 4, with the following rewritten paragraph:

-- Further, according to the aggregating system of this eighth characterizing feature, like the aggregating system of the seventh characterizing feature, if the calculations of the various values are automatically effected by the calculating means, it is possible to reduce the burden of calculating operations after the diagnosis. Further, regarding the inputs of the respective diagnoses too, the diagnosis results can be easily inputted to the inputting means through inputs respectively from the trap diagnotor and the leakage diagnotor, so that the trouble of the inputting operation can also be alleviated. Moreover, through these automization of calculations and improved efficiency of inputs, after the performance of the trap operation diagnosis, it is also possible to effectively reduce the time period needed until the consideration of the effectiveness of system improvement using the calculation results. --

Please replace the paragraph beginning at page 22, line 14, with the following rewritten paragraph:

-- More particularly, in the case of the evaluation data having contents indicative of at least the total unknown steam amount and the improvable unknown steam ratio, there are indicated the total unknown steam amount which is the total amount of steam loss in the evaluation target steam piping and the improvable unknown steam ratio which indicates what specific ratio of reduction is possible in the steam loss in the evaluation target steam piping. Hence, it is possible to evaluate[[.]], in terms of both the amount and the ratio, the effectiveness of the system improvement. Therefore, in this respect, it becomes possible to evaluate more appropriately and easily the effectiveness on the steam loss reduction by the system improvement through trap replacement (or repair) or by the system improvement through trap replacement (or repair) and the repair of leaking portions. --

Please replace the paragraph beginning at page 24, line 6, with the following rewritten paragraph:

-- Incidentally, in implementing the system operating method according to the fourth or fifth characterizing feature and implementing the aggregating system according to the seventh or eighth characterizing feature, in case the flash steam generated from high-pressure steam drain is to be reused in the low-pressure system, like the system diagnosing method according to one of the first through third characterizing features, it is preferred that the total receiving steam amount be grasped with the amount of the reused flash steam being included in duplication in the amount of steam prior to the draining. --

Please replace the paragraph beginning at page 24, line 15, with the following rewritten paragraph:

-- Also, in implementing the system operating method according to the fourth or fifth characterizing feature and implementing the aggregating system according to the seventh or eighth characterizing feature, also like the system diagnosing method according to one of the first through third characterizing features, the trap-passed steam loss refers to loss

of steam undesirably discharged to the outside as a result of its passage through the steam trap due mainly to the operational defect of the steam trap. Preferably, a trap-passed steam loss amount difference due to a type difference between the existing st[[r]]eam trap and a steam trap recommended for its replacement should also be treated as a trap-passed steam loss. --

Please replace the paragraph beginning at page 24, line 25, with the following rewritten paragraph:

-- In implementing the system operating method according to the fourth or fifth characterizing feature and implementing the aggregating system according to the seventh or eighth characterizing feature, the calculation of the total trap-passed steam loss amount can employ either one of the two methods as follow. Namely, the trap operation diagnosis can be performed on all the evaluation target steam traps mounted in the evaluation target piping and based on the result of this diagnosis, the total trap-passed steam loss amount may be obtained. Alternatively, the trap operation diagnosis can be performed only on[[e]] some steam traps selected from the evaluation target steam traps mounted in the evaluation target steam piping and based on the result of this diagnosis and number ratio information relating to the some steam traps and the all the evaluation target stem traps, the total trap-passed steam loss amount may be obtained deductively. --

Please replace the paragraph beginning at page 25, line 9, with the following rewritten paragraph:

-- Also, in implementing the system operating method according to the fifth characterizing feature and implementing the aggregating system according to the eighth characterizing feature, the calculation of the total steam leakage loss amount can employ either one of the two methods as follow. Namely, the trap operation diagnosis can be performed on the entire evaluation target steam piping and based on the result of this diagnosis, the total steam leakage loss amount may be obtained. Alternatively, the trap operation diagnosis can be performed only on[[e]] some portions selected from the evaluation target steam piping and based on the result of this diagnosis and evaluation amount ratio information (e.g. information concerning piping amount ratio, mounted valve number ratio, etc.), the steam leakage loss amount may be obtained deductively. --

Please replace the paragraph beginning at page 25, line 21, with the following rewritten paragraph:

-- And, in implementing the system operating method according to the fifth characterizing feature and implementing the aggregating system according to the eighth characterizing feature, preferably, the steam leakage diagnosis for diagnosing leakage of steam from respective portions of an evaluation target steam piping should be performed for each and every steam leakage from a joint or valve incorporated in middle of the piping or steam leakage from the pipe body per se as well as for steam leakage from a device to which the pi[[n]]ping is connected. However, in certain cases, the diagnosis can be performed for only one of them (e.g. steam leakage from the pipe). --

Please add the following paragraphs at the beginning of page 26:

-- BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a view schematically showing an entire construction of a system;
FIG. 2 is a view showing a trap diagnotor and its usage;
FIG. 3 is a view showing a leakage diagnotor and its usage;
FIG. 4 is a block diagram of a diagnosing computer system;
FIG. 5 is a view showing contents of calculation operations of the diagnosing computer system;
FIG. 6 is a view showing evaluation data;
FIG. 7 is a view showing evaluation data;
FIG. 8 is a view showing evaluation data;
FIG. 9 is a view showing evaluation data;
FIG. 10 is a view showing evaluation data;
FIG. 11 is a view showing evaluation data;
FIG. 12 is a block diagram of an aggregating system showing a further embodiment; and
FIG. 13 is a block diagram of an aggregating system showing a further embodiment.

DESCRIPTION OF REFERENCE MARKS

2	evaluation target steam traps
3	evaluation target steam piping
4	steam using apparatus
8	trap diagnotor
11	aggregating system (diagnosing computer system)
12	leakage diagnotor
D	evaluation data
Kts	improvable unknown steam ratio
Kx	unknown steam ratio
Kxx	improved unknown steam ratio
Kxx'	apparent improved unknown steam ratio
Qi	total receiving steam amount
Qo	total necessary steam amount
Qs	total steam leakage loss amount
Qt"	total trap-passed steam loss amount (sum)
Qt	total trap-passed steam loss amount (trap defect)
Qts	sum total steam loss amount
Qx	total unknown steam amount
Qxx	total basis unknown steam amount
S1	inputting means
S2	calculating means
S3	data generating means --

Please replace the paragraph beginning at page 27, line 7, with the following rewritten paragraph:

-- Incidentally, in this embodiment, it is assumed that as the result of the discussion with the client, four kinds of diagnosis are to be effected, namely, a trap operation

diagnosis for diagnosing operational conditions of a plurality of steam traps in the target system 1, a fluid leakage diagnosis for diagnosing fluid leakage, if any, from respective portions of the piping, of the evaluation target piping in the target system 1, a system improvement diagnosis for diagnosing need or no need of system improvement in any system construction of the target system 1, and a maintenance improvement diagnosis for diagnosing need or no need of improvement in a maintenance method currently adopted by the target system 1. It is also assumed that in the trap operation diagnosis, all st[[r]]eam traps 2 in the target system 1 are set as evaluation target steam traps and in the fluid leakage diagnosis the steam piping 3, the compressed air piping 5 and the nitrogen gas piping 6 are set respectively as evaluation target piping. --

Please replace the paragraph beginning at page 30, line 5, with the following rewritten paragraph:

-- In the above-described items of the calculation conditions, the distance means a distance between the leaking point and the diagnotor 12, the type means a type of the leaking point such as a pipe, a valve, a joint, etc. and the direction means detection direction of the ultrasonic wave for the leaking point and the fluid means type of leaking fluid, respectively. --

Please replace the paragraph beginning at page 30, line 10, with the following rewritten paragraph:

-- Upon input of the above items of the calculation conditions, then, based on these calculation conditions and the ultrasonic wave detection value, the calculating section of the diagnotor 12 calculates a fluid loss amount q due to the leakage at the leaking point (in this case, the weight flow amount per unit time for the steam loss amount qs and a volume flow amount per unit time for the loss amounts qp, qn for the compressed air and the nitrogen gas, respectively). And, these calculation results are stored in the storage section of the diagnotor 12, together with the ultrasonic wave detection value, the calculation conditions, as well as e.g. the position information, diagnosis date inputted separately to the diagnotor 12. --

Please replace the paragraph beginning at page 30, line 27, with the following rewritten paragraph:

-- Incidentally, in the case of a method adopted in this embodiment, while all the st[[r]]eam traps 2 included in the target system 1 are set as the evaluation target steam traps, in the trap operation diagnosis, the operation diagnosis by the trap diagnotor 8 is conducted only on some st[[r]]eam traps (specifically, steam traps 2a included in a representative area 1a decided through the discussion with the client) of the evaluation target steam traps. Then, based on the result of this diagnosis, the operational conditions of all the evaluation target steam traps (in this case, all of the steam traps 2 of the target system 1) will be evaluated by way of deduction. --

Please replace the paragraph beginning at page 31, line 30, with the following rewritten paragraph:

-- Incidentally, though may vary depending on the system, some examples of the system construction subjected to the system improvement diagnosis include a st[[r]]eam depressurizing construction for rendering high-pressure steam into low-pressure steam, a

processing construction such as st[[r]]eam drain or exhaust steam processing construction, water draining construction for an oil tank. Some examples of the maintenance operations are an inspection of corrosion in the piping or legs of a tank, axis alignment for a rotary device such as a steam turbine. --

Please replace the paragraph beginning at page 32, line 8, with the following rewritten paragraph:

-- Upon completion of the operation diagnosis by the trap diagnotor 8 on the steam traps 2a ("representative steam traps" hereinafter) included in the representative area 1a of the target system 1, as described hereinbefore, the stored information (e.g. the calculation/judgment result, detection value, input items including type, usage, etc. including the confirmed items) relating to each representative steam trap 2a and stored in the storage section of the trap diagnotor 8 are inputted to the diagnosing computer system 11. Also, upon completion of the leakage diagnosis using the leakage diagnotor 12 on the piping portions 3a, 5a, 6a ("representative piping portions" hereinafter) of the st[[r]]eam piping 3, the compressed air piping 5 and the nitrogen gas piping 6 included in the target system 1, the stored information (e.g. the calculation/judgment result, detection value, calculation conditions) relating to each leaking point and stored in the storage section of the leakage diagnotor 12 are inputted to the diagnosing computer system 11. In addition to the inputs from these diagnotors 8, 12, based on the data source documents provided from the client, the total number T of steam traps in the target system 1 (that is, the number of all the evaluation target steam traps in this embodiment), the number of bypass valves V included in the entire steam piping 3 of the target system 1, the number of the bypass valves Va included in the representative piping portion 3a, entire piping amounts X, Y in the target system 1 for each of the compressed air piping 5 and the nitrogen gas piping 6, and piping amounts Xa, Ya of the representative piping portions 5a, 6a are also inputted to the diagnosing computer system 11 by way of e.g. keyboard operations. --

Please replace the paragraph beginning at page 33, line 29, with the following rewritten paragraph:

-- Further, similarly, in the maintenance improvement diagnosis, the attendant first inspects the system 1 in the respect of its maintenance. Then, based on the result of this inspection and the data source document provided from the client, any existing maintenance method needing some improvement will be extracted. Thereafter, the attendant will ~~summary~~ summarize a method improvement proposal, its economic advantage and implement cost and input these, i.e. the method improvement proposal, the economic advantage and the implement cost, as a result of maintenance improvement diagnosis, in the form of a predetermined document to the diagnosing computer system 11 by way of e.g. keyboard operations. --

Please replace the paragraph beginning at page 36, line 22, with the following rewritten paragraph:

-- (g) Based on the calculation conditions (especially, the fluid item) for each leaking point of the diagnosis result inputted from the leakage diagnotor 12, there are obtained leaking portion number Ns, Np, Nn for each of the representative piping portion 3a, 5a, 6a of the respective piping 3, 5, 6 (that is, the number of leaking portions for each type of

fluid of the steam, compressed air and the nitrogen gas). Further, based on the leaking portion number Ns relating to steam (in this case, this corresponds to the number of the bypass valves in the representative area 1a and from which steam leakage has been detected) and the number of bypass valves Va separated inputted by e.g. a keyboard operation and relating to the representative pi[[n]]ping portion 3a in the steam piping 3, a ratio of the steam-leaking valves relative to the bypass valves in the representative piping portion 3a of the steam piping 3 is also calculated as a defective valve ratio Kv. --

Please replace the paragraph beginning at page 38, line 24, with the following rewritten paragraph:

-- (j) Based on the total receiving steam amount Qi and the total necessary steam amount Qo for the entire target system 1 separated inputted via e.g. keyboard operations, there are calculated a total unknown steam amount Qx as a difference therebetween and its monetary converted value MQx. Further, a ratio of the total unknown steam amount Qx relative to the total receiving steam amount Qi is calculated as an unknown steam ratio Kx. --

Please replace the paragraph beginning at page 44, line 23, with the following rewritten paragraph:

-- Incidentally, aside from the generation of the comprehensive evaluation electronic data D, in response to an instruction from the maker attendant, the diagnosing computer system 11 generates also a trap managing data source material, piping managing data source material, a system managing data source material, a maintenance managing data source material, etc. based on the pre-inputted information and/or the results of the calculating operations. --

Please replace the paragraph beginning at page 46, line 6, with the following rewritten paragraph:

-- Then, by using the sum total steam loss amount Qts which is the sum of the total trap-passed steam loss amount Qt" and the total steam leakage loss amount Qs, as the total improvable steam loss amount, there are obtained the improvable unknown steam ratio Kts, the unknown steam ratio Kx and the improved unknown steam ratio Kxx described above. --

Please add the following paragraph after the paragraph ending on line 30 of page 53:

-- The present invention may be used in diagnoses of systems of various fields, such as a chemical plant, including steam piping system. --

Please delete the contents of pages 54 and 55 of the specification.